

Appl. No. : 09/845,849
Filed : APRIL 30, 2001

REMARKS

Claims 1-34 are pending in the application. Claims 1-24, 28, 29, 33, and 34, were elected in response to the Restriction Requirement mailed June 25, 2002. Claims 2-5, 7, 22, and 25-34 have been cancelled without prejudice. Applicants reserve the right to pursue the subject matter recited in the non-elected claims in a continuation or divisional application. Claims 1, 6, 8, 12-21 were amended, Claims 9-11, 23, and 24 were reiterated and new Claims 35-39 were added. No new matter has been added by this amendment.

Objections to the Specification

Applicants have amended the specification to correct the claim for priority as suggested by the Examiner.

The Examiner objected to the specification for allegedly failing to comply with rules 37 CFR §§ 1.821-1.825. Specifically, the Examiner has required the amino acid sequences in Figures 2, 3A, and 3C to be identified in the Brief Description of the Drawing section of the specification by their sequence identifiers. Applicants have amended the specification as requested by the Examiner to add sequence identifiers in the Brief Description of the Drawing section. Accordingly, Applicants respectfully request withdrawal of this objection.

The Examiner noted certain hand markings in the specification on pages 7 and 8 of the specification. The specification has been amended to remove these markings. No new matter was added during the course of making these amendments. Accordingly, Applicants respectfully request withdrawal of this objection.

Objections to the Claims

The Examiner objected to Claims 2-5, 18, and 20 as allegedly containing minor informalities. Claims 2-5 have been cancelled, thus rendering the rejections of these claims moot. Claims 18 and 20 have been amended to correct the minor informalities. For this reason, Applicants respectfully request withdrawal of this rejection.

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The Pending Claims are Particular and Definite

Claims 1-18, 21, 28, 29, 33, and 34 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. The particular rejections recited in the Office Action are discussed in detail below.

Claims 1-6, 17, and 18 were rejected for reciting an "antisense FT-encoding nucleotide sequence". Although Applicants traverse, and believe this term clearly describes an antisense nucleotide sequence that inhibits expression of the FT gene, these claims have been amended as suggested by the Examiner to more clearly define the invention. Applicants submit that these amendments overcome the rejection.

Claim 8 was rejected for allegedly reciting "the structural gene" with insufficient antecedent basis. Applicants disagree, however have amended Claim 8 to correct the antecedent basis for this term. Applicants submit that this amendment overcomes the rejection.

Claim 12 was rejected for allegedly reciting "the nucleic acid" with insufficient antecedent basis. Applicants traverse, however have amended Claim 12 to refer to the genetically modified plant of Claim 1. Applicants submit that this amendment overcomes the rejection.

Claims 15 and 16 stand rejected for allegedly reciting plant cells or plant tissue. Applicants traverse, however solely to advance prosecution, have amended these claims to clarify that they describe the genetically modified plant of Claim 1. As such, Applicants submit that these amendments overcome the present rejection.

Claims 18 and 20 were rejected for an alleged lack of clarity. Applicants disagree. However, to advance prosecution, Claim 18 has been amended to refer to the antisense sequence of Claim 17, wherein the antisense sequence of Claim 18 has at least 95% sequence identity to SEQ ID NO:3. Claim 20 depends from Claim 19 and recites at least one antisense sequence that has at least 95% sequence identity to SEQ ID NO:3. Applicants submit that this amendment sufficiently clarifies the subject matter of Claims 18 and 20 to overcome the present rejection.

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The Examiner rejected Claims 18 and 20, for lack of clarity. Applicants traverse, however to advance prosecution have amended Claim 17 to more clearly refer to antisense molecules that inhibit expression of SEQ ID NO: 1, thus overcoming this rejection.

Claim 21 was rejected for lacking antecedent basis for "a T-DNA derived vector". Applicants traverse, however to advance prosecution, Claim 21 has been amended to recite "a T-DNA sequence". Applicants submit that this amendment overcomes the rejection.

Claims 28, 33, and 34 were rejected as being indefinite for depending from non-elected claims. These claims have been cancelled thus rendering this rejection moot.

Claim 29 has been cancelled without prejudice. Accordingly, the rejection of this claim is moot.

The pending claims are fully supported by the specification

Claims 1, 7-17, 19, 21-24, 33, and 34 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter that allegedly was not described in the specification in such a way as to reasonably convey to a skilled artisan that Applicants were in possession of the claimed subject matter at the time the application was filed. Applicants respectfully disagree.

To satisfy the written description requirement, a patent application must describe the invention in sufficient detail that one of skill in the relevant art could conclude that the inventor was in possession of the claimed invention at the time the application was filed. *See Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64, (Fed. Cir. 1991). In view of the recent decision by the Federal Circuit, *Union Oil of California*, it is clear that an Applicant need not precisely recite each and every element of a claim limitation in the specification in order to satisfy the written description requirement. *See Union Oil of Cal. v. Atlantic Richfield Co.*, 208 F.3d 989 (Fed. Cir. 2000).

Applicants' invention relates to the discovery that introduction of antisense molecules against the FT gene in a plant leads to a phenotype of delayed flower development. Applicants describe actual experimental evidence to illustrate their discovery in Example 3, beginning on

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page 41 of the specification. In Example 3, an exogenous antisense molecule against the FT gene was introduced into the genome of a plant. The plant grown and found to have a delayed flowering phenotype. Throughout the specification, including page 30, under the heading "ANTISENSE POLYNUCLEOTIDES", Applicants describe several methods for inhibiting the production of a gene using antisense technology. Accordingly, Applicants have fully described genetically modified plants having an exogenous anti-FT gene nucleotide sequence in their genome, and having the phenotype of delayed flowering.

For this reason, one of ordinary skill in the art would reasonably conclude that Applicants were in full possession of the claimed subject matter. However, solely to clarify the invention, independent Claims 1, 17 and 19 have been amended to recite a plant that inhibits expression of a FT gene having a nucleotide sequence as set forth in SEQ ID NO: 1, and wherein the plant has a phenotype of delayed flower development. New Claim 35 recites a method for making such plants.

The specification clearly teaches plants that use antisense molecules to inhibit expression of a FT gene having a nucleotide sequence as set forth in SEQ ID NO: 1, and wherein the plant has a phenotype of delayed flower development. For example, Applicants fully describe an example of using such an antisense sequence (SEQ ID NO: 3) in the specification to make plants with delayed flowering. In addition, on page 30, beginning on line 8 of the specification, Applicants broadly describe how to make other antisense molecules that would provide a similar function. For these reasons, one of ordinary skill in the art would believe that Applicants were in possession such plants. Accordingly, Applicants respectfully request the withdrawal of this rejection.

The pending claims are fully enabled by the specification.

Claims 1-5, 7-24, 28, 29, 33, and 34 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly lacking enablement. The Examiner has alleged that it would require undue experimentation for one of ordinary skill in the art to determine a nucleotide sequence of any other FT-encoding nucleotide sequence having the recited percent identity to SEQ ID NO: 3, that

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would cause a delay in flowering time in any genetically modified plant. Applicants respectfully disagree.

"To be enabling, the specification of a patent must teach those skilled in the art to make and use the full scope of the claimed invention without 'undue experimentation' ... Nothing more than objective enablement is required, and therefore it is irrelevant whether this teaching is provided through broad terminology or illustrative examples." *See In re Wright*, 999 F.2d 1557 (Fed. Cir. 1993).

One of ordinary skill in the art would not be required to engage in undue experimentation to make transgenic plants having delayed flowering and comprising an antisense molecule that interfered with expression of the FT gene. Applicants teach how to make and use antisense molecules that inhibit the FT gene to produce plants with delayed flowering times in Example 3. From this, and other teachings provided in the specification, one of ordinary skill in the art could find other antisense molecules that interfered with similar FT encoding genes, and thereafter test those antisense molecules to determine their affect on a transgenic plants. In light of the trivial experimentation required of a skilled artisan to make and use the full scope of the claimed invention, Applicants submit that the claims are fully enabled by the present specification as filed.

Notwithstanding the remarks above, Applicants have amended Claims 1, 16, 17 and 19 solely in order to advance prosecution of this application. These claims now recite transgenic plants, seeds and methods of making such plants by using an antisense sequence that inhibits expression of a FT gene having a nucleotide sequence as set forth in SEQ ID NO: 1. Applicants fully describe an example of using such an antisense sequence (SEQ ID NO: 3) in the specification to make and use plants with delayed flowering. In addition, on page 30, beginning on line 8, Applicants broadly describe how to make other antisense molecules that would provide a similar function. For these reasons, Applicants fully enable claims to using any antisense molecule that inhibits the expression of an FT gene having a nucleotide sequence of SEQ ID NO: 1. The specification provides ample teaching to guide a skilled artisan in practicing the full scope of the claimed subject matter. Accordingly, withdrawal of the present rejection is requested.

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Claim 33

Claim 33 was rejected under 35 U.S.C. § 102(a) as allegedly being anticipated by Song, et al. Applicants have cancelled this claim, thus rendering this rejection moot.

CONCLUSION

Applicants have endeavored to address all of the Examiner's concerns as expressed in the outstanding Office Action. Accordingly, amendments to the claims and the specification, the reasons therefor, and arguments in support of the patentability of the pending claim set are presented above. Any claim amendments which are not specifically discussed in the above remarks are made in order to improve the clarity of claim language, to correct grammatical mistakes or ambiguities, and to otherwise improve the capacity of the claims to particularly and distinctly point out the invention to those of skill in the art. In light of the above amendments and remarks, reconsideration and withdrawal of the outstanding rejections is specifically requested. If the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, the Examiner is respectfully requested to initiate the same with the undersigned.

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Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

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By: 

Michael L. Fuller
Registration No. 36,516
Attorney of Record
Customer No. 20,995
(619) 235-8550

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